Effects of environment and nutritional conditions on mycelial growth of Ganoderma boninense

ABSTRACT

The Basal Stem Rot disease is caused by the soil-borne pathogen, Ganoderma boninense. It is an annihilating and widespread disease in oil palm (Elaeis guineensis Jacq.). The nutritional studies were conducted to know the best sources of carbon and nitrogen, ideal pH regimes, the best humidity and optimum temperature required for the mycelial growth of G. boninense. Out of six carbon sources tested, fructose and glucose proved to be the best carbon sources for the mycelial growth of G. boninense. Out of five nitrogen sources tested, ammonium citrate and ammonium nitrate were noticeably found as the best nitrogen sources for the mycelial growth. Studies on different pH regimes in medium with 83% potatoes and 75% lignocellulosic materials revealed that the ideal pH regimes for the mycelial growth were 4-5. The best humidity for mycelial growth of G. boninense was found between 50-60%. It is suitable to grow between 25 and 32°C, while the optimum temperature is 32°C. This information can be used as a guideline for Ganoderma's disease prevention study and control strategies in the oil palm plantation in the future.

Keyword: Oil palm; Nutritional condition; Ganoderma's disease; Mycellial growth